

ABSTRACT OF THE DISCLOSURE

An electric field emission device having a triode structure is fabricated by using an anodic oxidation process. The device includes a supporting substrate, a bottom electrode layer to be used as an cathode electrode of the device, a gate insulating layer having a plurality of first sub-micro holes, a gate electrode layer having a plurality of second sub-micro holes connecting to the first sub-micro holes, an anode insulating layer having a plurality of third sub-micro holes connecting to the second sub-micro holes, a top electrode layer for hermetically sealing the device, the top electrode layer being used as an anode of the device and a plurality of emitters formed in the first sub-micro holes. The emitters are formed so as to come into as close contact as possible to the electrodes of the device, which results in decreasing a driving voltage.